DOCUMENT RESUME

ED 413 075 PS 025 929

AUTHOR Bradley, K. Sue; Bradley, Jack
TITLE Modifying Curriculum through Divergent Learning Across Disciplines.
PUB DATE 1997-03-00
NOTE 9p.; Paper presented at the Annual Conference and Exhibit of the Association for Supervision and Curriculum Development (Baltimore, MD, March 22-25, 1997).
PUB TYPE Guides - Non-Classroom (055) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Brainstorming; Class Activities; *Creative Thinking; Curriculum Enrichment; *Divergent Thinking; Elementary Education; *Elementary School Students; Learning Activities; Productive Thinking; Thinking Skills
IDENTIFIERS Analogical Reasoning; Synectics

ABSTRACT

This paper demonstrates a variety of activities designed to enrich the learning environment for all children through the use of divergent thinking activities. The first activity involves structural indexing, whereby students brainstorm words found in a reading selection and construct sentences using a bingo formation, with the concentration on relationships between ideas. The second activity entails synectics, a form of analogy in which unrelated concepts are forced together to develop novel ideas. Examples include direct analogy, personal analogy, and symbolic relationships. The third activity involves attribute listing, in which students complete a graphic representation of characteristics of an object. The fourth activity is redefinition, in which students brainstorm descriptions and associated ideas, and use the brainstormed list to create a story. The fifth activity involves productive thinking, including fluency warm-ups and responding to literature. The sixth activity entails imagining and drawing consequences from imagined events to create a story. Contains 10 references. (KB)

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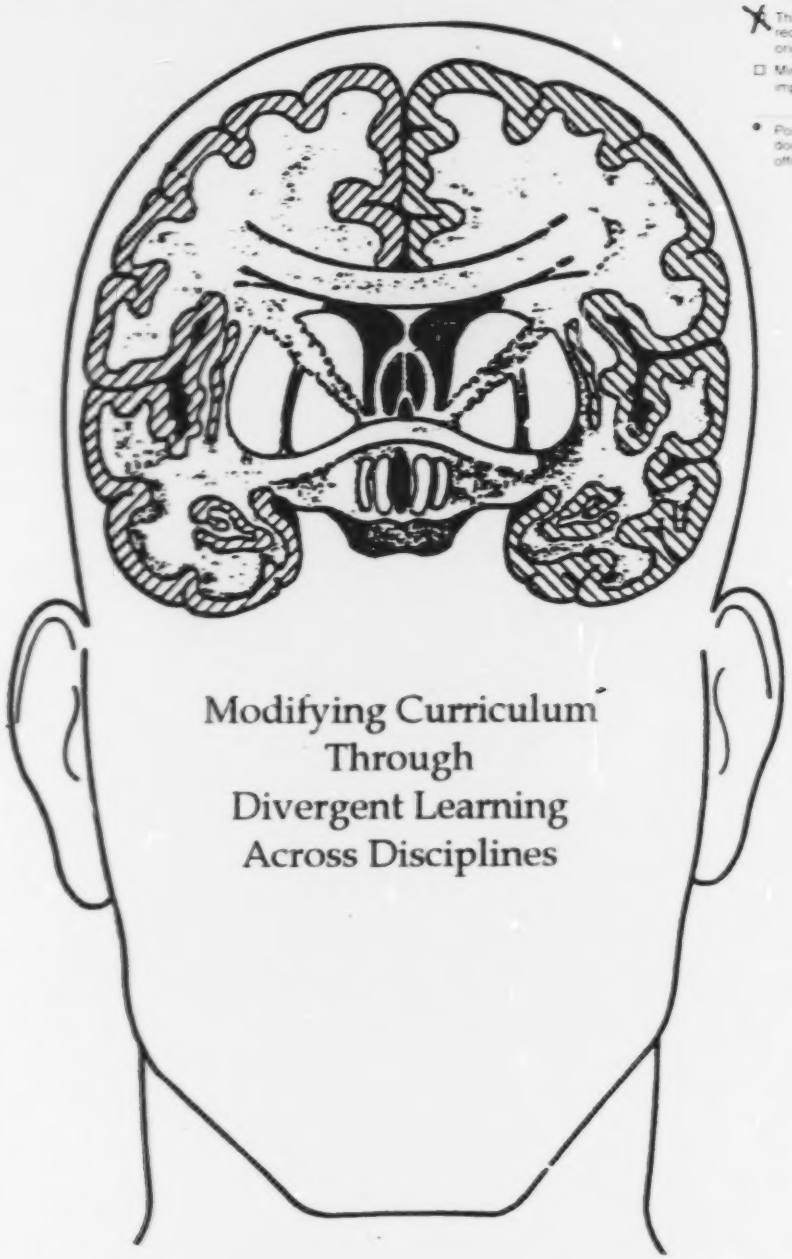

Modifying Curriculum Through Divergent Learning Across Disciplines

Presenters:
Sul Ross State University, Rio Grande College

Dr. K. Sue Bradley
Sul Ross State University
Rio Grande College
205 Wildcat Drive
Del Rio, Texas 78840
(210) 775-5129 Ext. 20

Dr. Jack Bradley
Sul Ross State University
Rio Grande College
205 Wildcat Drive
Del Rio, Texas 78840
(210) 775-5129 Ext. 19

Association for Supervision and Curriculum Development Conference
Baltimore, Maryland March, 1997

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Jack Bradley
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Current research suggests that a stimulating curriculum in an enriched environment can enhance brain growth and learning ability. So, the stimuli surrounding students and their response to that stimuli can determine the actual physical nature of the brain, how many networks they have and how elaborate they are. This session will demonstrate a variety of activities designed to enrich the learning environment for all students. Methods which have traditionally been emphasized only with gifted children need widespread application. The implications of this research demand immediate action on the part of educators.

I. Structural Indexing

A. Procedure:

Choose a major area of study. Brainstorm nine or twelve words found in a reading selection. This can be from a trade book or a content text. On a 3x3 or 4x4 grid, list each brainstormed idea. Have students construct sentences using a bingo formation. The idea is to concentrate on relationships between ideas. Create true statements or generalizations from the ideas selected.

B. Examples:

messages	spies	Revolutionary
Tories	mission	America
British	Washington	buttons

Sample Sentences:

1. During the Revolutionary War, spies often carried messages to George Washington.

2. The Tories' mission was to have America remain a part of England.

3. John got through the British troops and delivered the buttons with messages to George Washington.

4. During the Revolutionary War, the mission of the British was to keep America as part of England.

5. John's mission was to deliver messages hidden in his buttons.

Giant	ocean	blowhole
gentle	whale	jumps
mammal	sounds	Orca

Sample Sentences:

1. An Orca is a giant whale.

2. Giant whales live in the ocean and breathe through blowholes.

3. Gentle whales can jump high in the air.

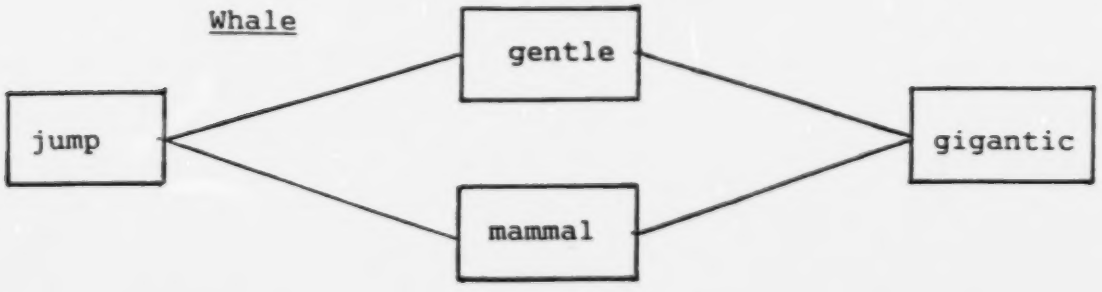
4. Whales make interesting sounds in the ocean.

5. A whale is a mammal that breathes through a blowhole.

II. Synectics (a form of analogy where unrelated concepts are forced together to develop novel ideas.)

A. Direct Analogy

To facilitate students' creation of simile or metaphor sentences, create the following graphic:



Brainstorm with students words that the stimulus brings to mind in completing the graphic. Then ask them to create relational statements using those words. 3.

Sample Sentences:

1. A baby whale drinks its mother's milk just like a human baby does.

2. Whales are usually as gentle as lambs.

3. Whales can be as big as small islands in the sea.

4. A baby whale is like a cow's calf because its baby also is called a calf.

5. A whale is a gigantic mammal.

6. Whales jump high in the air and breathe through their blowholes.

B. Personal Analogy

Ask students to put themselves in the comparison.

Examples:

Imagine that you are an Orca whale in an aquarium show. People come to the aquarium to see the shows and be entertained by you. How do you feel when the people look at you? Would you rather be somewhere else? If so, where? Write a paragraph about yourself as a whale. Be the whale.

Imagine you are a button that fell to the ground. You know you contain a message that George Washington has to receive. You also know that John will be hung if he is arrested as a spy. Pretend you are that button. How can you get back to John without the British noticing? Write a paragraph about yourself as a button. Be the button.

C. Symbolic Relationships

1. Reference to symbols, not to meaning.

a. whale:blind (same number of letters)
b. whale:stale (same ending)
c. blowhole:farmhouse (same number of syllables)
d. blue:then (same shape, or configuration)

2. Two word description with conflicting words 4.

Procedure: Think of two words with opposite meanings. Explain what each symbolic analogy means.

Example:

friendly enemies

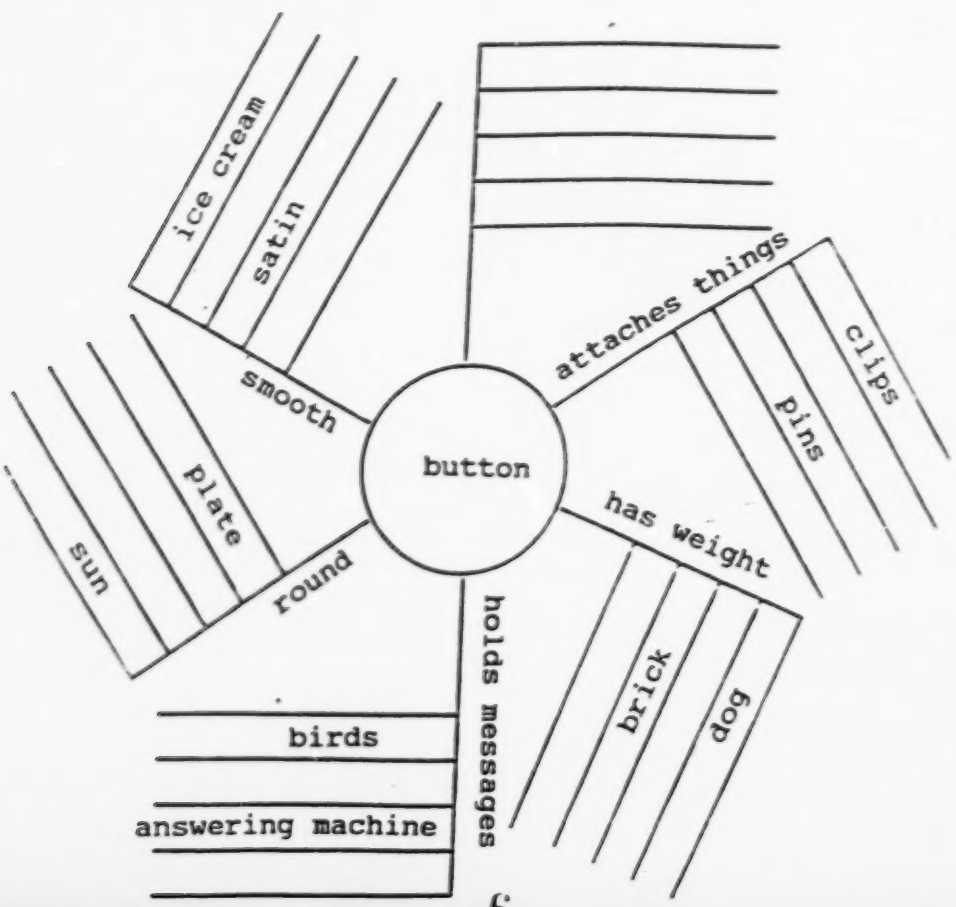
The Del Rio Rams and the Eagle Pass Eagles are friendly enemies. On the football field, they fight to win. Yet, after the game, they shake hands. Some of the players are even cousins.

Other examples:

pretty ugly	pleasantly annoying
friendly fire	deafening silence
dark day	deliciously evil
bright darkness	hectic holiday
distant relative	

III. Attribute Listing

A. Complete the graphic by writing characteristics of the circled object on the rays of the sun. Students should complete this process with you. Then, brainstorm other things that have the same characteristics.



IV. Redefinition

A. Procedure:

Divide your paper into two columns giving them the following headings:

Whale Description List	Imagination List
Brainstorm words to describe whales.	Brainstorm what the word makes you think of.
Example:	
gentle has blowhole	family laughter
gigantic entertaining	vacation elephant
breathes air	boring car trip
makes sounds mammal	

Finally, use the brainstormed list to create a story.

Example:

Last summer I went with my family to Sea World. We went to a show put on by whales. It was both interesting and entertaining. The sounds they made were intriguing. All of the audience laughed at the whale's antics. My family had a great time watching the whales perform. The only bad thing about our vacation was the long, boring car trip.

V. Productive Thinking

A. Fluency Warm-ups

1. List the characteristics of a spy. What other people would need to have these same characteristics.

2. Give each group a button. Have groups brainstorm uses for the object. After a few minutes, add another direction.

Example:
a. Make the item smaller. How could you use it?
b. Use the item for space exploration. How could you use it?
c. Cut it in half. How might you use it?
d. Use it in the gymnasium. How might you use it?

The list could be endless.

B. Responding to Literature

1. List all of the:
   a. places identified in the story.
   b. shapes in the story.
   c. sounds heard in the story.
   d. adjectives that describe the characters in the story.
   e. feelings in the story.

2. Change a character.
   a. Rewrite the story making John a girl.
   b. Rewrite the story making John a spy for the British.
   c. Rewrite the story adding a dog as a character.
   d. Rewrite the story making John a double agent.

3. Change the setting.
   a. Make this a present day story.
   b. Make the setting be George Washington's camp.

4. How would you feel if you were the main character? Would you have done anything differently?

5. How would you feel if you were John's parents? Have you ever felt that way?

6. How would you feel if you were the main character's worst enemy?

7. You are a picture in the home of the main character. Describe what you look like.

VI. Consequences

A. Just suppose that...

B. What would happen if...
   1. all of the characters were girls.
   2. the main character was an animal.
   3. the ending of the story became the beginning.

C. Pretend you are a shark about to attack a baby whale. What does the mother whale do?

An effective way to introduce consequences-type activities is through drawing. Divide the paper into six parts. Have students retell the story through pictures, responding to any of the stimuli in the consequences section above. After the drawings are completed, ask students to orally tell their stories.

1.	2.	3.
4.	5.	6.

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